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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,229	04/14/2004	Keishi Inoue	09792909-5867	6345
26263	7590	11/02/2005	EXAMINER	
SONNENSCHN NATH & ROSENTHAL LLP			DOAN, THERESA T	
P.O. BOX 061080			ART UNIT	
WACKER DRIVE STATION, SEARS TOWER			PAPER NUMBER	
CHICAGO, IL 60606-1080			2814	

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/824,229

Applicant(s)

INOUE, KEISHI

Examiner

Theresa T. Doan

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 August 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) 6 and 7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of claims 1-5 in the reply filed on 08/26/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Drawings***

3. Figures 10-11 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsumoto et al. (U.S. Pat. 5,880,503).

Regarding claim 1, Matsumoto (Fig. 4) discloses a semiconductor device comprising:

a substrate 13 (column 6, line 23);

a first conductive layer 4 formed on the substrate 13 (See Fig. 4 Labeled by Examiner below and column 7, lines 18-21);

a second conductive layer 4 formed on the substrate 13 (also see Fig. 4 Labeled by Examiner below and column 7, lines 30-32) at a predetermined distance from the first conductive layer 4;

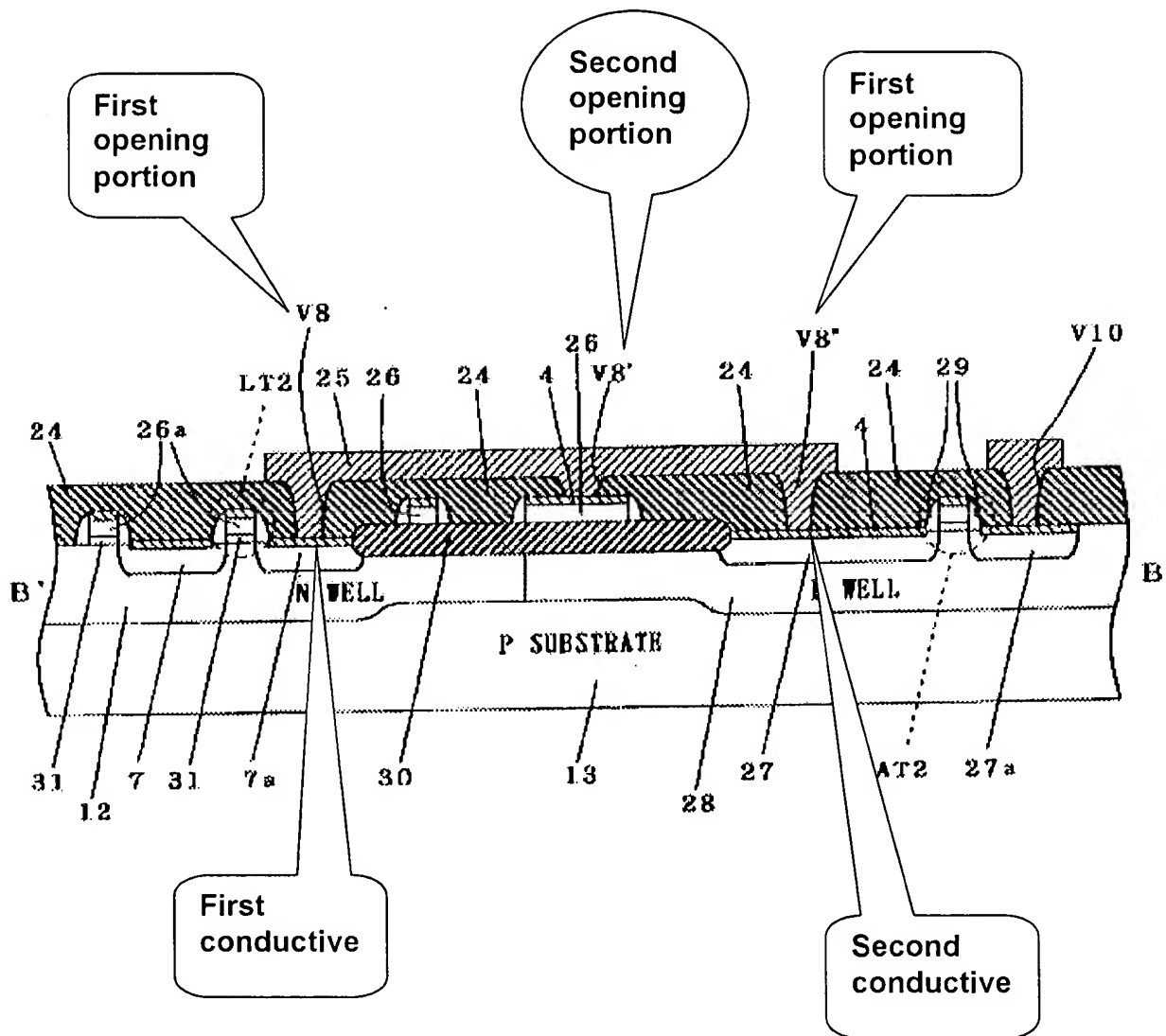
an insulation film 24 (column 7, line 38) formed on upper surfaces of the first conductive layer 4 and the second conductive layer 4 and having a plurality of first opening portions (V8/V8") (column 7, lines 41-43) to expose either the first conductive layer 4 or the second conductive layer 4 and one or more second opening portions V8' (column 7, lines 41-43) to expose neither the first conductive layer 4 formed at the first opening portion V8 nor second conductive layer 4 formed at the first opening portion V8"; and

a third conductive layer 25 (column 7, line 39) formed on an upper surface of the insulation film 24 (column 7, lines 38-39) in such a manner to fill up the first opening portions (V8/V8") and the second opening portions V8' for making electrical connection between the first conductive layer 4 and the second conductive layer 4 by way of the first opening portions (V8/V8");

wherein the second opening portions V8' are formed between a pair of the first opening portions (V8/V8") along the third conductive layer 25 (See Fig. 4 Labeled by the Examiner below).

Regarding claim 2, Matsumoto discloses that the second opening portions V8' are formed at a predetermined distance between the first opening portions (V8/V8").

FIG. 4



Regarding claim 4, Matsumoto (Fig. 4) discloses a semiconductor device comprising: a substrate 13 (column 6, line 23); a first conductive layer 4 formed on the substrate 13 (column 7, lines 18-21); a second conductive layer 4 formed on the substrate 13 (column 7, lines 30-32) at a predetermined distance from the first conductive layer 4; an insulation film 24 formed on upper surfaces of the first conductive layer 4 and the second conductive layer 4 and having a plurality of opening portions (V8/V8") (column 7, lines 41-43) to expose one end portion of the first conductive layer 4 or of the second conductive layer 4; and a third conductive layer 25 formed on an upper surface of the insulation film 24 (column 7, lines 38-39) in such a manner to fill up the opening portions (V8/V8") for making electrical connection between the first conductive layer 4 and the second conductive layer 4 (See Fig. 4 above); wherein the third conductive layer 25 has a predetermined wiring length to maintain the connection, and has the electrical connection between the first conductive layer and the second conductive layer 4 at both ends of the third conductive layer 25 by way of the opening portions (V8/V8"). It is noted that where the claimed and prior art products are identical or substantially identical in structure or composition or are produced by identical or substantially identical processes, claimed properties or functions are presumed to be inherent. In re Best, 195 USPQ 430, 433 (CCPA 1977). Therefore, if the prior art teaches the identical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). In this case, the third conductive layer 25 would inherently have properties of maintaining the connection even if the length of the third conductive layer in a direction of longer length

changes due to thermal expansion or contraction because the forming of a second opening portion V8' between the first opening portions V8 and V8" would help to disperse the force resulting from the change in the wiring length of the third conductive layer 25.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. (U.S. Pat. 5,880,503) as applied to claims 1 and 4 above, and in view of Lin et al. (U.S. Pat. 6,649,509).

Matsumoto discloses that the third conductive 25 is made of metal, but does not disclose that the third conductive layer is made of copper.

However, Lin (Fig. 10) teaches a conductive 22 made of low resistance copper material (column 12, lines 28-30) and disposed in the opening portions 31,32 for providing electrical connection between the first conductive layer 10 and the second conductive layer 10'. Accordingly, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to use the copper for the metal layer 25 of Matsumoto because the conductive layer containing copper has low-resistance



characteristics and is well known conductive material for providing the electrical contact between the two electronic elements, as taught by Lin (column 12, lines 28-30).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theresa T. Doan whose telephone number is (571) 272-1704. The examiner can normally be reached on Monday to Friday from 7:00AM - 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Theresa Doan  
October 25, 2005.